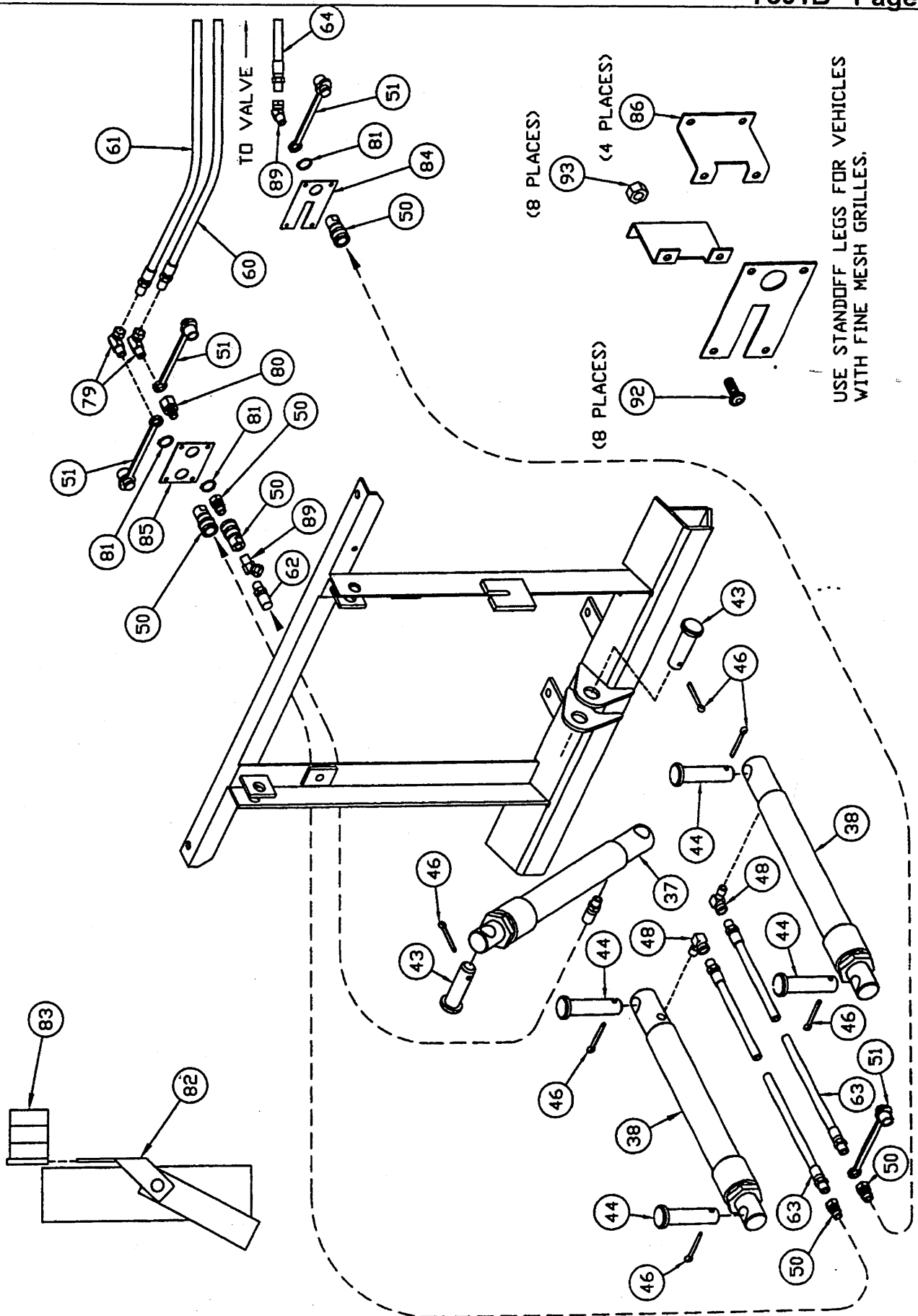
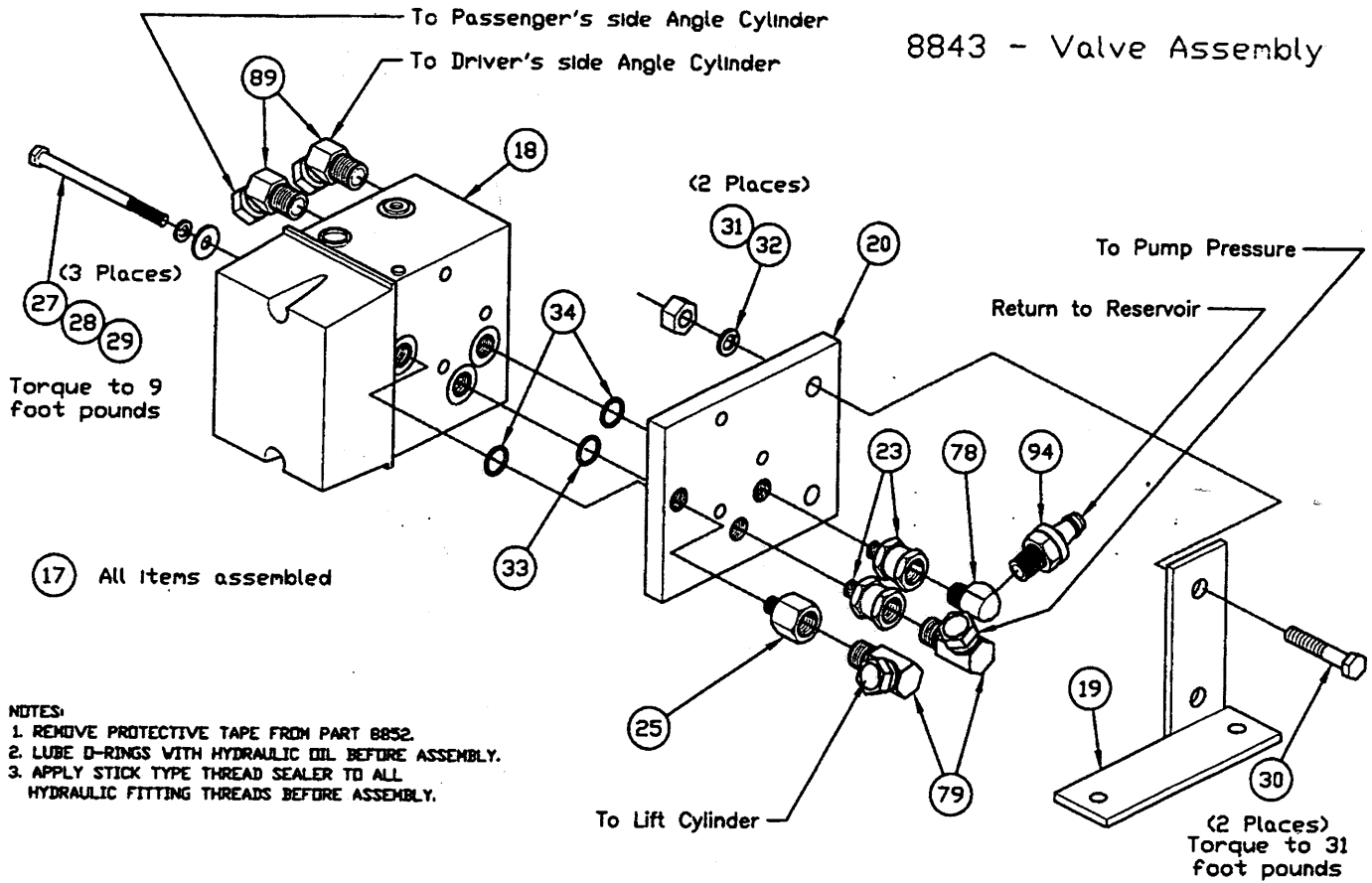


6460

HEADGEAR DRIVER'S SIDE



8843 - Valve Assembly



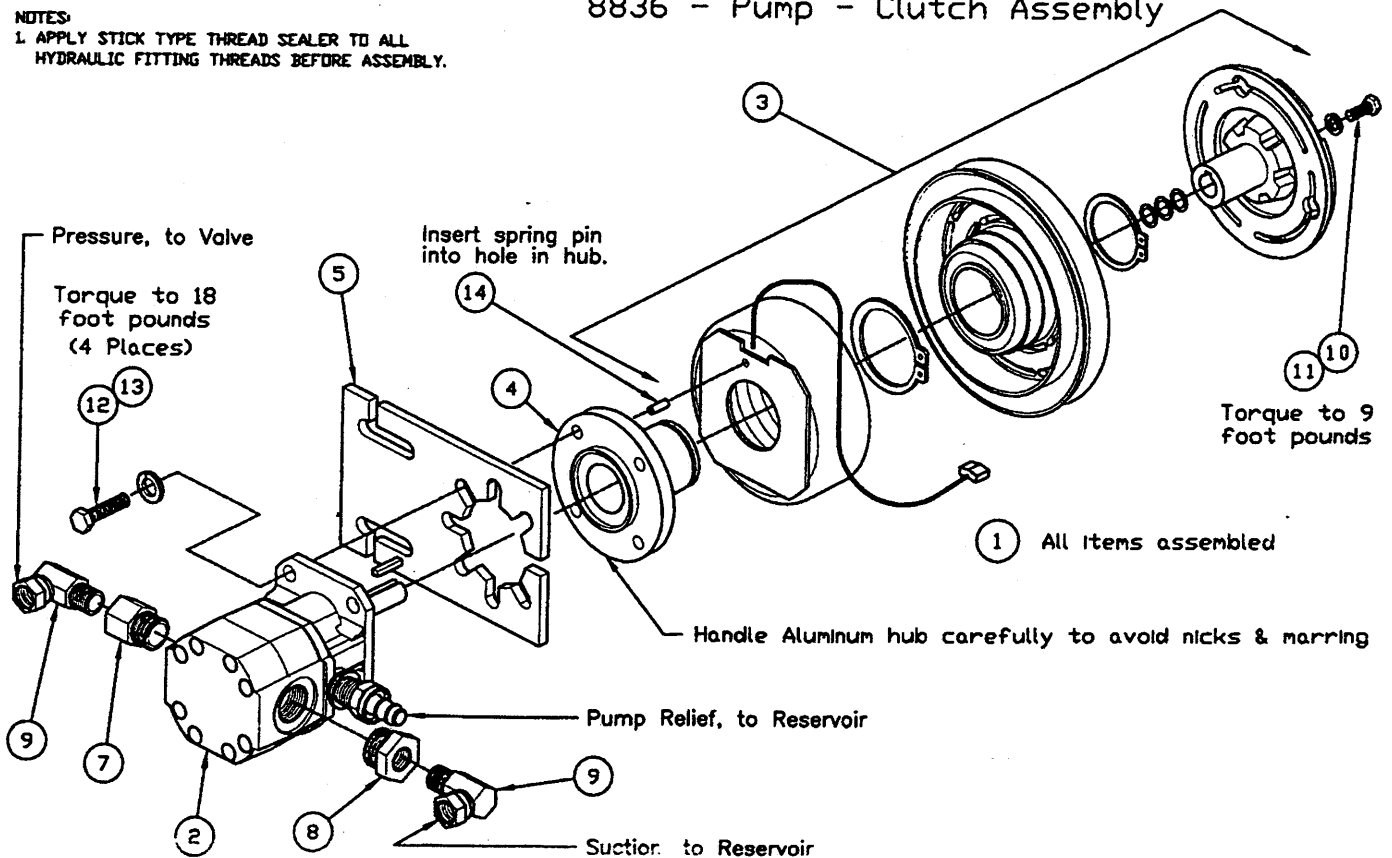
NOTES:

1. REMOVE PROTECTIVE TAPE FROM PART 8852.
2. LUBE O-RINGS WITH HYDRAULIC OIL BEFORE ASSEMBLY.
3. APPLY STICK TYPE THREAD SEALER TO ALL HYDRAULIC FITTING THREADS BEFORE ASSEMBLY.

8836 - Pump - Clutch Assembly

NOTES:

1. APPLY STICK TYPE THREAD SEALER TO ALL HYDRAULIC FITTING THREADS BEFORE ASSEMBLY.



Hydraulics Parts List

8840-40 Common Hydraulic Kit - Electric Clutch/Remote Reservoir

Ref #	Qty	PN	Description
Assy	Comp		
1	1	8836	Pump - Clutch Assembly
	2	8845	Pump Assy
	3	8842	Electric Clutch
	4	8837	Hub - Clutch Mounting
	5	8380	Pump Plate
	6		Relief Quill
	7	8079	Reduction Bushing 3/4 to 9/16 O-ring
	8	8846	Reduction Bushing 7/8 to 9/16 O-ring
	9	2315	9/16 O-ring to 3/8p x 90 Swivel Adapter
	10	90615	1/4 x 1/2 (NC) Gr.5 Cap Screw
	11	90359	1/4 Lock Washer
	12	90045	5/16 x 1 (NF) Gr.5 Cap Screw
	13	90360	5/16 Lock Washer
	14	90707	5/32 X 1/2 Spring Pin
	15		
16	1	8389	Oil Reservoir
17	1	8843	Valve Assembly - Elec Clutch - Solenoic
	18	7921	Valve Manifold Assy Sol - 4000
	19	8851	Valve Bracket
	20	8852	Mounting Plate - Valve
	21		
	22		
	23	2	8849 1/8 Nptm to 1/4 Nptf Swivel Adapter
	24		
	25	1	8848 1/8 Nptm to 1/4 Nptf Reducing Adapter
	26		
	27	3	90696 1/4 x 3-1/2 (NC) Gr.5 Cap Screw
	28	3	90359 1/4 Lock Washer
	29	3	90311 1/4 Plain Washer
	30	2	90111 3/8 x 1-1/2 (NC) Gr.5 Cap Screw
	31	2	90361 3/8 Lock Washer
	32	2	90334 3/8 (NC) Nut
	33	1	3719 O-Ring - 013
	34	2	5827 O-Ring - 012
	35		
36	1	8874	Dash Bracket Bag (not shown)
37	1	A318	10" Lift Cylinder Assembly
38	2	A3660	12" Angle Cylinder Assembly
39	1	8764	Filter Kit
40	1	8935	Control Harness - clutch & sol. valve
41	1	7736	Solenoid Control
42	1	8847	Bolt Bag for 8840-40
	43	2	6814 Clevis Pin - 1 OD x 3-5/16
	44	4	6816 Anchor Pin - 1 OD x 4
	45	1	8853 Bolt Bag - Part of 8847
	46	6	90601 1/4 x 1-1/2 Cotter Pin
	47	2	8391 Quill - 3/8 Nptm to 1/2 ID Hose
	48	2	2780 1/4 Npt x 90 degree Street Elbow
	49		
	50	3	A1587 Hose Disconnect Assembly
	51	4	1588 Dust Plug - Closure/Male
	52	1	3042 Grommet - Rubber, Split
	53	1	4477 Grommet - Split Hose (not shown)
	54	1	8329 Dielectric Grease Tube (not shown)
	55	1	4302 3M 560 in-line Connector
	56	1	4303 Female Connector (not shown)
	57	1	5048 Male Connector (not shown)

FASTENER TORQUE (FT-LB)			
DIAMETER- THREADS PER INCH	GRADE		
1/4 - 20	6	9	13
5/16 - 18	11	18	28
3/8 - 16	19	31	46
7/16 - 14	30	50	75
1/2 - 13	45	75	115
9/16 - 12	66	110	165
5/8 - 11	93	150	225
9/16 - 12	150	250	370
7/8 - 9	150	378	591
1 - 8	220	583	893

Hydraulics Parts List

7531 Peculiar Hydraulic Kit - Electric Clutch/Remote Reservoir

59	1	2707	26" HP Hose, 1/4P to 3/8P	
60	1	8632	78" HP Hose, 1/4P To 1/4P	
61	1	6066	66" HP Hose, 1/4P To 1/4P	
62	1	3074	22" HP Hose, 1/4P To 1/4P	
63	2	4424	36" HP Hose, 1/4P To 1/4P	
64	1	376	32" HP Hose, 1/4P To 1/4P	
65	1	8393	1/2" LP Hose - 19"	
66	2	8451	3/8" LP Hose - 16"	
67	1	691	60" V-Belt (not shown)	
68	1	20056	Drive Sheave**	
69				
70	1	7417	Pump Bracket	
71	1	7009	Pump Bracket Brace	
72				
73	1	8871	Valve Plate	
74	1	5975	Valve Plate Brace	
75				
76	1	5704	Caution Label	
77	1	8869	Bolt Bag for 7531	
	78	1	765	1/4 Npt x 90 degree Street Elbow
	79	4	319	1/4 Npt x 90 degree Swivel Adapter Union
	80	1	4486	Bulkhead Adapter
	81	3	4485	7/8" Snap Ring
	82	1	8741	Bracket - Cable Boot
	83	1	8284	Cable Boot
	84	1	8688	QD/Electric Plate (short)
	85	1	8686	2 QD Plate (short)
	86	4	8687	Stand off Leg
	87	4	8324	Tie Wrap - 3/16 x 14 (not shown)
	88	8	3666	Tie Wrap - 3/16 x 8 (not shown)
	89	4	8127	1/4 x 45 degree Street Swivel
	90	1	8992	3" Fitting Protector
	91	1	5529	Shock Mount
	92	8	90687	1/4 x 1/2 (NC) Button Head Socket Cap Screw
	93	8	90350	1/4 (NC) Locknut
	94	1	8850	Quill - 1/4 Nptf to 3/8 ID Hose
	95	1	20057	Bushing .750 **
	96	2	90106	3/8 x 1-1/4 (NC) Gr.5 Cap Screw
	97	3	90154	3/8 x 4 (NF) Gr.5 Cap Screw
	98	1	90103	3/8 x 1 (NC) Gr.5 Cap Screw
	99	3	90361	3/8 Lock Washer
	100	3	90334	3/8 (NC) Nut
	101	2	90315	3/8 Plain Washer
	102	7	90042	5/16 x 1 (NC) Gr.5 Cap Screw
	103	1	90054	5/16 x 1-1/2 (NC) Gr.5 Cap Screw
	104			
	105	10	90360	5/16 Lock Washer
	106	11	90332	5/16 (NC) Nut
	107	3	90313	5/16 Plain Washer
	108			
	109	1	90202	7/16 x 5-1/4 (NF) Gr.5 Cap Screw
	110	1	90317	7/16 Plain Washer
	111			
	112			
	113	5	4268	5/8" Spacer Washer
	114	1	90605	M8 x 1.25 x 35 Gr.8.8 Cap Screw
	115	1	90428	M8 Lock Washer
	116	1	90579	M10 x 1.50 x 90 Gr.10.9 Cap Screw (nylon patch)

** Order PN 20058 for Drive Sheave w/Bushing for Service

Note: The 20850 Fish-Stik™/Clutch Relay Kit is required for installations that will use the 9400 Fish-Stik™ Push Button Hand-Held Control.

1. Cylinder & Cylinder Hose Assembly

- A. Attach female half of disconnect (50) & a 1/4" npt 45 degree swivel (89) to 22" HP hose (62). Using bench vise to hold lift cylinder (37), remove closure from port & screw the other end of the hose directly into this port. Place lift cylinder with hose pointing towards passenger's side into ears on lift arm & upper gear. Secure with clevis pins (43) & cotter pins (46).
- B. Attach a male quick disconnect half (50) to one end of a 36" HP hose (63). Place a dust cover (51) on the end of the other 36" HP hose (63) & put another male quick disconnect half (50) on this hose.
- C. Using bench vise to hold angle cylinders (38), remove closures from ports. Screw brass forged street ells (48) into ports. Ells should point forward toward live end of cylinder & slightly upward as they will be installed on the A-frame. The driver's side cylinder uses the 36" HP hose with the dust cover & male disconnect half. The passenger's side cylinder uses the 36" HP hose with the male disconnect half & **no dust cover**. Install cylinders to their respective sides so that ells are between the cylinders & A-frame. Secure cylinders with anchor pins (44) & cotter pins (46) at each end.

2. Drive Sheave Installation

Caution: Before inserting bushing, check center of crankshaft for rust or any foreign material and remove.

- A. Remove serpentine belt. Remove & discard the three capscrews holding vehicle crank pulley to vibration damper. Remove & discard cap screw & flat washer holding vibration damper to crankshaft, if vehicle is so equipped. Check vehicle crank pulley & remove any burrs around the holes that the cap screws were removed from.
- B. Install drive sheave bushing (95) into center of crank shaft, reinstall vehicle sheave. Place the drive sheave (24) center hub through the vehicle sheave and bushing. Place a 7/16 x 5-1/4 (NF) Gr. 5 cap screw (109) and flat washer (110) in center of sheave, plus three 3/8 x 4 (NF) Gr. 5 cap screws (97) with spacer washers (113) through sheave spacers. **Tighten 7/16 x 5-1/4 cap screw (torque to 50 ft-lbs) before tightening the three 3/8 cap screws (torque to 31 ft-lbs)**

3. Pump - Clutch Assembly & Pump Bracket

- A. Remove & save both nuts from front exhaust manifold port. Remove & discard bolt on back of alternator, above valve cover. Remove & discard bolt on front of alternator to left of previously removed bolt. Place both slots of pump bracket (70) onto manifold studs & attach with previously removed nuts. **Do not fully tighten any fasteners until all fasteners & pump bracket brace are installed.** Align tab with slot on pump bracket with hole on back of alternator. Install one M10 x 1.5 x 90 cap screw (116) & tighten. Fasten pump bracket brace (71) to remaining hole on front of alternator with one M8 x 1.25 x 35 gr.8.8 cap screw (114), lock washer (115), & two spacer washers (113) between brace & alternator. **Cropped out part of pump bracket brace should be positioned towards alternator cooling fins.**

Attach other end of brace to lower hole in pump bracket with one 5/16 x 1 1/2 (NC) gr.5 caps crew (103), lock washer (105), & nut (106). Tighten all pump bracket fasteners & reinstall serpentine belt at this time. Using remaining hole in bent portion of pump bracket as a guide, drill a 13/32" hole through alternator bracket & fasten brackets together with a 3/8 x 1 (NC) gr.5 cap screw (98), lock washer (99), & nut (100).

- B. For Chev/GMC with 5.0L or 5.7L engines, pump will have to be rotated 90 degrees in mounting plate so that the relief quill & suction ports are pointing down towards oil pan. Place pump in vise & remove the four fasteners holding the plate on the pump. Rotate pump 90 degrees and reinstall fasteners.
- C. Attach slotted portion of pump - clutch assembly (1) to pump bracket with two 3/8 x 1-1/4 (NC) gr.5 capscrews (96), flat washers (101), lock washers (99), & nuts (100). Do not fully tighten these fasteners at this time. Install 60" v-belt (67) over drive & clutch sheaves. Tighten belt then pump plate fasteners.

Caution: Position power steering hoses with at least 1-1/2" clearance from the pump "V" belt.

4. Valve Assembly & Valve Plate

Caution: Pump tank fill must be vertical to engine.

- A. Attach valve assembly (17) to valve plate (73) with two 5/16 x 1 (NC) gr.5 cap screws (102), lock washers (105), & nuts (106). Put cap screws up through valve plate & valve bracket using the two end holes on valve plate with valve hanging outside end of plate. Attach 90 degree bent end of valve plate brace (74) to third hole from end of valve plate as illustrated with one 5/16 x 1 (NC) gr.5 cap screw (102), lock washer (105), & nut (106). Attach shock mount (91) in hole opposite valve plate brace with a lock washer (105) & nut (106). Locate valve plate with valve, brace, & shock mount attached on top of driver's side inner fender-well beside windshield washer container so that valve is near level with no contact of vehicle equipment. Using shock mount, valve plate brace, & front hole in valve plate as guides, mark & drill three 1 1/32" holes in fender. Fasten brace & front hole in valve plate to fender with two 5/16 x 1 cap screws (102), flat washers (107), lock washers (105), & nuts (106). Attach shock mount to fender with a flat washer (107), lock washer (105), & nut (106). Tighten all fasteners.

Using illustration as a reference install two 1/4 x 45 degree swivel fittings (89) to "angle" cylinder-ports on valve. Install two 1/4 Npt x 90 degree swivel adapter unions (79) to "Lift" and "Pressure" ports on valve. Install a 1/4 Npt x 90 degree street elbow (78) and a 1/4 Nptf to 3/8 ID hose quill (94) to "Return" port on valve. When facing valve from bumper, fittings on valve should be tighten to these positions as follows: lift hose swivel @ 2:00 o'clock, center swivel fitting @ 12:00 o'clock, & 90 degree street elbow @ 10:00 o'clock. Place oil reservoir (16) on inner holes on valve plate with quills facing engine and place two 5/16 x 1 capscrews (102) up through valve plate & reservoir and attach with two lock washers (105) and nuts (106).

Note: Use dielectric grease (54) to prevent corrosion on all under hood electrical connections. Fill receptacles & lightly coat ring terminals & blades before assembly or lightly coat connections after assembly.

5. Single Lever Control & Harness Installation

- A. Check both sides of fire wall for wires, & hot or moving engine parts, then drill a 5/8" hole in the fire wall from inside of cab approximately 1-1/2" above hood release lever for control harness (40).
- B. Install the solenoid control (41) & dash bracket as per instructions found in the 8874 - Dash Bracket Bag (36) located in the common hydraulic bolt bag.
- C. Remove negative battery cable from battery. **Warning! Disconnect battery before installing, removing or replacing electrical components.**
- D. Insert control harness (40) through hole drilled in fire wall from inside of cab. Attach connector to plug on solenoid control. Connect the red fuse holder wire on harness to a circuit which is on only when the ignition key is on with either an in-line connector (55), female connector (56), or male connector (57). Route main portion of harness (white, green, blue, & black wires) to valve. Place grommet (52) around control harness where it passes through fire wall. Remove plastic cover from valve & install solenoid wires according to instructions inside cover. With harness strain relief in place inside cover, screw cover in place. Attach black wire with ring terminal exiting loom near valve to good vehicle ground. Route portion of harness with brown/red & black/orange wires with female spade terminals to electric clutch. Attach female spade terminals to clutch plug (brown/red to black with white stripe & black/orange to black). Route the other black/orange wire with female spade connector to head lamp relay & male spade connector to black/orange ground wire from vehicle harness. **Note: relay & vehicle harness are found in peculiar light kit.**
- E. Install plow head lamp harness as per harness kit instructions. Stretch rectangular opening of plug cover strap (from harness kit) over grille connector ends of long battery cable (from hydraulics box) & vehicle harness (from harness kit). Place plug cover over mold on harness.

- F. Reconnect negative battery cable to battery terminal.

6. Hydraulic Hose Installation

Caution: Keep hoses away from hot or moving engine components. Failure to do so may cause hose to burst resulting in a possible engine fire.

- A. Remove grille and drill an 1-7/8" hole in the radiator core support approximately 6" below driver's side head light. Install a split hose grommet (53) around the hole.

Note: Do not shorten LP hoses. Bends in all hoses must have sufficient radius to prevent crimping. A crimped hose may cause over-heating of the hydraulic system, hose failure, and possible engine fire.

- B. Install the 26" HP hose (59) to center swivel on back of valve and attach 3/8" end of hose to top swivel on pump with swivel pointing towards air filter. (Hose is long to prevent crimping on bends). Attach one end of a 16" x 3/8" LP hose (66) to relief quill on bottom of pump and the other end to the 3/8" quill on reservoir. Attach a 1/2" quill (47) to threaded port on back of oil reservoir and a second 1/2" quill (47) to 90 degree swivel fitting on side of pump next to relief quill. Point 1/2" quill on pump toward air filter on engine and attach the 19" x 1/2" LP hose (65). Attach other end of this hose to 1/2" quill on oil reservoir. Attach one end of the remaining 16" x 3/8" LP hose (66) to quill on back of valve & other end of hose to remaining quill on oil reservoir. Attach fitting protector (90) to swivel on top of pump with a tie wrap (88). Cut LP hose approximately 4 to 5" from quill on valve and install in line oil filter as per filter kit instructions (39) at the end of this document.
- C. Attach one end of the 32" HP hose (64) to the 1/4 x 45 degree swivel fitting installed in the driver's side angle port of valve. Route this hose out through the radiator core support and out through grille low & about 14" from center on driver's side. Attach female half of quick disconnect (50) to the QD/Electric grille plate (84) with a snap ring (81). Put a dust plug (51) on the end of a 45 degree swivel fitting (89) and attach it to quick disconnect. Attach HP hose to 45 degree swivel. Route the head lamp connector (with dust cover) from previously installed light kit vehicle harness, through radiator core support. Slide connector into the slot provided in the QD/Electric grille plate. The grille plate should be oriented with head lamp connector to the inside of vehicle. Attach grille plate to grille with two long tie wraps (87).
- D. Attach one end of the 66" HP hose (61) to the 1/4 x 45 degree swivel installed in the passenger's side angle port on valve and one end of the 78" HP hose (60) to the 1/4 x 90 degree swivel on the lift port on back of valve. Route both these hoses down through the radiator core support, across the front of the radiator, out through the radiator core support and out through grille low & about 14" from center on passenger's side. Attach female half of quick disconnect (50) to one hole of the 2 QD grille plate (85) with a snap ring (81). Install 1/4 x 90 degree swivel (79) with a dust plug (51) to back of disconnect. Attach the bulk head adapter (80) with a snap ring (81) to the other hole in the 2 QD grille plate. Install a male end of quick disconnect (50) to the bulk head adapter. Attach a 1/4 x 90 degree swivel (79) with dust plug (51) to the other end of disconnect. Attach the 66" HP hose to the female disconnect and the 78" lift hose to the male disconnect. Place the "angle" female disconnect on grille plate towards the outside of vehicle and attach grille plate to grille with two long tie wraps (87). **Some GMC models with fine mesh grille may have to use stand off legs (86) fastened with four 1/4 x 1/2 socket head cap screws (92) & lock nuts (93) on each grille plate.**
- E. Trucks using stand off legs will attach grille plates as described in step "D" above except the two 90 degree and one 45 degree swivel fittings will not be used.
- F. Install cable boot bracket (82) on driver's side headgear brace, between brace & fasteners. Insert cable boot (83) on over bracket.
- G. Install in-line filter kit (39) per instructions located in the common hydraulics kit.

8. OPERATIONS

- A. Check all fittings & fasteners for tightness. Secure hoses with nylon tie wraps (88). Place Caution Label (76) on dash beside control head.
- B. Attach hose disconnects, push lift arm all the way down, & fill reservoir with Type "A" automatic transmission fluid. Start engine, lift & angle blade several times. **If blade angles opposite from control lever position, reverse the two angle hoses at the valve.** Raise front end of vehicle until plow is clear of ground with lift cylinder fully retracted. Check reservoir oil level. Angle blade (with lift cylinder retracted) to remove air from system. Recheck reservoir oil level.

NOTE: The installer must inform the end user of the proper procedure for removing and residual hydraulic pressure that may be trapped in the raise or angle hoses. The plow will be much easier to install or remove if the proper procedures are followed. Before coupling or uncoupling the hydraulic disconnects you must turn off the engine and then turn the key to the "on" position. (The red LED light will be lit.) Move the control to the four plowing positions. Activate lower/float before removing or installing the plow.